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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/511,690

10/14/2004

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96790P469

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12/11/2008

EXAMINER

VLAHOS, SOPHIA

ART UNIT

PAPER NUMBER

2611

MAIL DATE

DELIVERY MODE

12/11/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/511,690	Applicant(s) SUZUKI ET AL.	
	Examiner SOPHIA VLAHOS	Art Unit 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9,10,15,30,31,40,41 and 46 is/are pending in the application.
- 4a) Of the above claim(s) 1-8,11-14,16-29,32-39,42-45 and 47-62 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9,15,30,40,41 and 46 is/are rejected.
- 7) ☒ Claim(s) 10 and 31 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 September 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see "Remarks" section II pages 6-8, filed 9/09/08, with respect to the rejection of claims 10, 15, 31,41, and 46 under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement have been fully considered and are persuasive. The 35 U.S.C §112, first paragraph of claims 10, 15, 31, 41 has been withdrawn.

2. Applicant's arguments see "Remarks" section III pages 8-9 filed 9/09/08 have been fully considered but they are not persuasive.

Applicant argues:

"In contrast with Claim 9, Suzuki does not teach or suggest a decoding means that comprises de-spreading means for performing de-spreading of the signal received by said reception antenna by using a spreading code corresponding to a differentiated spread signal. According to the Examiner, this de-spreading means of Claim 9 is disclosed by column 6, lines 1-6 and 46-62, as well as Figure 3, blocks 317, 302 and 303. However, the portions of Suzuki referred to by the Examiner describe multiplication of the received signal by impulses having a spread code sequence superimposed on them in a half-chip timing period behind the spread code sequence to perform the de-spreading process. We submit that neither column 6, lines 46-62 nor any other portion of Suzuki teaches or suggests the spreading means for performing de-spreading of a

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receive signal by a reception antenna using a spreading code corresponding to a differentiated spread signal, as in Claim 9. Hence, the multiplication of a receive by impulses having a spread code with a half-chip period timing fails to teach or suggest the de-spreading of a receive signal using a spreading code corresponding to a differentiated spread signal as in Claim 9.”

Examiner Response:

Examiner disagrees that “Suzuki does not teach or suggest a decoding means that comprises de-spreading means for performing de-spreading of the signal received by said reception antenna by using a spreading code corresponding to a differentiated spread signal”. The spread spectrum receiver of the Fig. 3 performs complementary signal processing to the transmitter shown in Fig. 1. The specific language of claim 9 is as follows (lines 14-16): “...wherein said decoding means comprises despreding means for performing despreding for the signal received by said reception antenna **by using** a spreading code corresponding to a differentiated spread signal...” (emphasis added).

The multiplication of the received signal at mixer 305 with the spreading code out of block 317, is a despreding operation (Suzuki, column 6, lines 46-50) using a spreading code (superimposed to impulses out of block 315), and the spreading code out of block 314 corresponds (i.e. it is the same spreading code used at the transmitter side) to a differentiated spread signal (Fig. 3, combination of blocks 302 and 303, comprise a

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delay subtract differentiator. (For example U.S. 5,991,289 showing a delay subtract differentiator Fig. 4, blocks 162, 164).

For at least the above reasons, the claims 9, 15, 30, 40, 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki (U.S. 7,257,148) in view of Curry et al. (U.S. 6,345,073).

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 40-41, 46 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. While the claims recite a series of steps or acts to be performed, a statutory “process” under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing. The instant claims neither transform underlying subject matter nor positively tie to another statutory category that accomplishes the claimed method steps, and therefore do not qualify as a statutory process.

Method claim 40 recites the steps of: encoding, transmitting, receiving, decoding, restoring, spreading, and despreading that neither transform underlying subject matter

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nor positively tie to another statutory category that accomplishes the claimed method steps, and therefore claim 40 does not qualify as a statutory process.

Dependent claims 41, 46 are also rejected since they at least contain the limitations of claim 40.

Drawings

4. The drawing (Figure 32 with "Prior Art" label added) was received on 09/09/08 and is acceptable.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 9, 15, 30, 40, 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki (U.S. 7,257,148) in view of Curry et al. (U.S. 6,345,073).

With respect to claim 9, Suzuki discloses: a radio transmitter including means for encoding a digital signal to be transmitted using a code (Fig. 1, column 5, lines 7-11, components up to transmitting antenna, see also Fig. 6 showing the digital data SG501 to be encoded (referring to Fig. 5) but also applicable to the data sequence signal of Fig. 1), and a transmission antenna which transmits the signal encoded by said

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encoding means (Fig. 1, see antenna transmitting signal 108); and a radio receiver (Fig. 3 receiving side, column 6, lines 1-6) including a reception antenna which receives the transmitted signal (Fig. 3, antenna receiving signal 301) and decoding means for performing decoding corresponding to encoding for the signal received by said reception antenna and restoring the digital signal (see Fig. 3 components to the right of antenna 301, and the output of the integrator 306 corresponds to the originally transmitted data (i.e. the restored digital data), also the function of a receiver is understood to be complementary to the function a corresponding transmitter), wherein communication is performed without using any carrier (see Fig. 1 and Fig. 3 where no transmission/reception carriers are used and column 2, lines 1-3 (referring to prior art system that is improved by the invention) see a UWB system inherently does not use transmission/reception carriers); wherein said encoding means comprises spreading means for performing a spread spectrum process by multiplying the digital data signal to be transmitted by a spreading code (Fig. 1, see multiplier 103, performing a spread spectrum process on signal (data sequence) and spread code out of block 102), and signal generation means for generating an impulse signal in response to rise and fall of a signal spread by said spreading means and outputting the impulse signal to said transmission antenna (Fig. 1 combination of blocks 104, 105, 106, 107 column 5, lines 13-26 see that the impulse generator is responsive to the rise/fall "1"/"0" of the spread signal), and; wherein said decoding means comprises despread means for performing despread for the signal received by said reception antenna by using a spreading code (see despread operation Fig. 3 performed on the received signal by

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mixer 305 and an appropriately delayed spreading code out of block 317 (determined by a synchronization operation) see column 6, lines 1-6, 46-62)) and corresponds to a differentiated spread signal (see Fig. 3 blocks 302 and 303 perform a differentiating operation on the received spread signal).

Suzuki does not expressly teach: peak detection means for detecting a peak of the signal despread by said despreding means and restoring the digital signal.

In the same field of endeavor, Curry et al. discloses: a peak detection means for detecting a peak of a signal despread by despreding means and restoring the digital data (column 4, lines 9-17, see that after code phase acquisition, the despread signal (the integrated value of) is a constant value (and theoretically has a peak value since the spreading code of the received signal and the locally generated one are perfectly matched (correlated) to continually detect the presence of desired signal. Curry et al. teaches a peak detector that compares the despread and integrated received signal to an established threshold, to determine the presence of a desired signal).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the system of Suzuki et al., based on the teachings of Curry et al. so that a peak detector is used to determine the presence of a desired signal that is subsequently restored (see Curry et al., column 4, lines 9-15).

Apparatus claim 30, and method claim 40 are rejected based on a rationale similar to the one used to reject claim 9 above.

With respect to claim 15, Suzuki discloses: in that said signal means outputs only an impulse signal in an n th (n is an integer not less than 2) harmonic band at a spread chip rate (column 3, lines 31-43, where instead of using the entire harmonic frequency band of the UWB specification 3GHz - 6GHz, a second harmonic frequency of 3GHz to 5GHz is used to transmit a signal at a spread chip rate as determined by the chip rate of the spread code sequence).

Method Claim 46 is rejected based on a rationale similar to the one used to reject claim 15 above.

Allowable Subject Matter

7. Claims 10, 31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SOPHIA VLAHOS whose telephone number is (571)272-5507. The examiner can normally be reached on MTWRF 8:30-17:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammed Ghayour can be reached on 571 272 3021. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/SOPHIA VLAHOS/
Examiner, Art Unit 2611
12/5/2008

/Mohammad H Ghayour/
Supervisory Patent Examiner, Art Unit 2611